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NEW SPECIES OF *ECHINISCUS* (HETEROTARDIGRADA: ECHINISCOIDEA: ECHINISCIDAE) FROM KOREA

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Abstract.—*Echiniscus cheonyoungi,* a new tardigrade species is described. The present new species mainly differs from the other species of the genus *Echiniscus* in the following characteristics: lack of spurs at the base of the internal claws, presence of all lateral cirri and dorsal cirri C^d, D^d, and cuticular plates with double sculpturing consisting of irregular pores and minute closely spaced polygons.

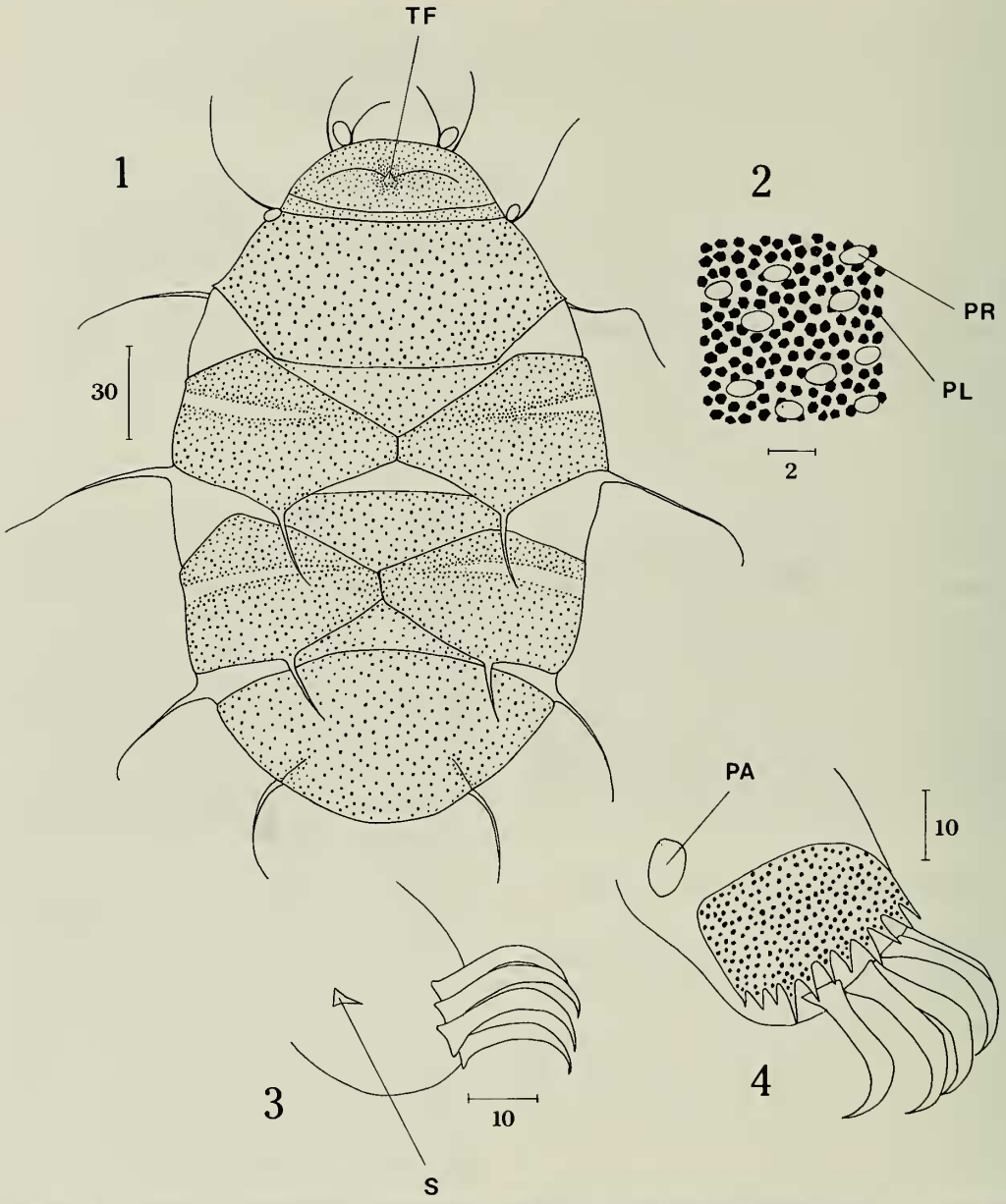
A new species of *Echiniscus* was identified during an investigation of the tardigrades collected from lichens on shaded rocks and the bark of live trees in Korea. Holotype and one paratype are deposited in the Zoological Museum, University of Copenhagen (ZMUC), Denmark, and two paratypes are deposited in the Moon collection, Department of Molecular Biology, Seoul National University, Korea.

Echiniscus cheonyoungi, new species
Figs. 1–4

Material examined.—Holotype (ZMUC TAR 00101) and three paratypes (one paratype, ZMUC TAR 00102). All the type specimens were collected from lichens on shaded rocks and the bark of trees on 27 Jul 1988 from Wŏlch'ulsan (126°42′N, 34°46′E), Chŏllanam-do, Korea.

Description.—Holotype. Body (Fig. 1) light yellow, with length 218 μm. Internal buccal cirri of head 27.5 μm long; external buccal cirri, 31.7 μm long; buccal papillae prominent, 7.3 μm long by 3.3 μm wide, larger than clavae. Cuticular plates (Fig. 2) with double sculpturing consisting of minute, closely spaced polygons and irregular pores except for head and leg plates having only polygons; polygons similar in size (0.3–0.5 μm), but slightly smaller on head and leg plates; pores larger than polygons (0.6–1.6 μm), and more distinct on scapular and terminal plates. Head plate (Fig. 1) having small triangular middorsal field without sculpture. Paired plates 1, 2 (Fig. 1) with transverse stripe of clear zone separating smaller anterior part from posterior part of plate. Median plates undivided. Cuticular sculpture of median plates similar to that of other plates; median plate 3 somewhat subsided compared with other dorsal plates. Terminal plate (Fig. 1) with rather shallow lateral incisions, without terminal facetting. Delineation of all cuticular plates distinct. All lateral cirri A, B, C, D and E (Fig. 1) present. Cirrus A (50 μm) thinner than any other cirri on body, about 0.2 times as long as body length; cirrus B (50 μm) as long as cirrus A; cirrus C (62 μm) longest of all lateral cirri; cirrus D (41 μm) slightly longer than cirrus E; cirrus E (35 μm) shortest of all lateral cirri. Dorsal cirri, C^d (26 μm) and D^d (24 μm) also present and similar in length. Spine (Fig. 3) on leg I a short thorn. Large sized papilla (Fig. 4) on leg IV. Dentate fringe on leg IV (Fig. 4) with about 11 sharp teeth of irregular size, and very finely sculptured without pores. Internal and external claws of legs (Figs. 3, 4) without basal spur; internal claws slightly longer than external claws on all legs.

Variation.—The cirrus C^d was very re-



Figs. 1–4. *Echiniscus cheonyoungi,* new species, holotype. 1, whole animal, dorsal view (TF, triangular middorsal field); 2, surface pattern of cuticle (PR, pore; PL, polygon); 3, spine and claws of leg I (S, spine); 4, dentate fringe and claws of leg IV (PA, papilla). Scales in μm.

duced on the right side of body and absent on the left in one specimen of the three paratypes. The other two paratypes showed no variation.

Etymology.—It is our pleasure to name this species for Dr. Cheon Young Chang, who provided an opportunity for the first author to study tardigrade systematics.

Remarks.—The minute, closely spaced polygons situated under the larger, irregular

pores of the cuticle are observed only at the higher magnification with phase-contrast microscopy. Otherwise, they may appear to be just irregular granules.

The sculpture of dorsal plates, the location of cirri or spines on the surface of body, and the claw morphology, particularly the presence and location of secondary or tertiary spurs of claws are considered to have high taxonomic value for identifying species of the genus *Echiniscus* (see Kristensen 1987). The present new species is close to *Eschiniscus quadrispinosus* Richters, 1902 and *E. merokensis suecicus* Thulin, 1911, especially in the location of cirri (see Thulin 1911, Ramazzotti & Maucci 1983). The present new species can be distinguished from *E. quadrispinosus* and *E. merokensis suecicus* by the following major differences: (1) The basal spur of internal claws is absent in the present new species, but is present in *E. quadrispinosus* and *E. merokensis suecicus.* (2) In the present new species, the head and leg plates lack the irregular pores that are present in the other cuticular plates, whereas the head and leg plates also have pores as the other cuticular plates in *E. quadrispinosus* and *E. merokensis suecicus.* (3) The small triagular middorsal field without sculpture on the head plate is found in the present new species, but is absent in *E. quadrispinosus* and *E. merokensis suecicus.*

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